

APPENDIX C

Pavement Distress Codes

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Distress Codes A thru K apply to concrete pavements.

A. D-Cracking (Durability Cracking)

- A1 - Initial stage: Faint cracking pattern; no loose or missing pieces.
- A2 - Low level: Cracking pattern is plainly visible; no loose or missing pieces.
- A3 - Medium level: Well-defined; some small pieces may be loose and/or missing. Some patching may have occurred.
- A4 - High level - Infrequent: Severe cracking with loose and/or missing pieces. Patching likely to have occurred.
- A5 - High level - Frequent: Severe cracking with loose and/or missing pieces. Patching likely to have occurred.
- A6 - Bare pavement known to contain D-cracking aggregate. No distress showing. NOTE: Bare pavements showing D-cracking distress are to be rated using A1 through A5. This is a special use code and does not need to be entered during a condition rating survey. Please contact the Office of Planning and Programming before using this code.

B. Transverse Cracking

- B1 - Low level: Hairline crack with no spalling or faulting; a well-sealed crack with no distress.
- B2 - Medium level - Infrequent: A crack with a width of up to 1/4" exhibiting some spalling and/or faulting. Some maintenance patching may have occurred or is needed.
- B3 - Medium level - Frequent: A crack with a width of up to 1/4" exhibiting some spalling and/or faulting. Some maintenance patching may have occurred or is needed.
- B4 - High level - Infrequent: A crack with a width of greater than 1/4" and/or a crack exhibiting much spalling and/or faulting. Maintenance patching probably has occurred.
- B5 - High level - Frequent: A crack with a width of greater than 1/4" and/or a crack exhibiting much spalling and/or faulting. Maintenance patching probably has occurred.

C. Joint Deterioration

- C1 - Infrequent: The joint has opened to a width less than 1" and/or has spalling (width less than 6") and/or faulting up to 1/2" . The joint has little or no loss of material.
- C2 - Frequent: The joint has opened to a width less than 1" and/or has spalling (width less than 6") and/or faulting up to 1/2" . The joint has little or no loss of material.
- C3 - Infrequent: The joint has opened to a width greater than 1" and/or has spalling (width 6" or greater) and/or faulting of 1/2" or greater.
- C4 - Frequent: The joint has opened to a width greater than 1" and/or has spalling (width 6" or greater) and/or faulting of 1/2" or greater.

D. Centerline Deterioration

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- D1 - Low level: Infrequent cracking along the centerline and/or spalling less than 3" wide. Minor popouts and/or faulting may be present.
- D2 - Medium level: More frequent cracking along the centerline and/or spalling between 3" and 6" wide. Popouts and/or faulting may be present. Some patching may have occurred.
- D3 - High level: Frequent areas of cracking along the centerline and/or spalling greater than 6" . Popouts and/or faulting are likely to be present. Patching is likely to have occurred.

E. Longitudinal Cracking

- E1 - Infrequent: A crack that is less than 1/2" wide. Little or no spalling and/or faulting is present.
- E2 - Frequent: A crack that is less than 1/2" wide. Little or no spalling and/or faulting is present.
- E3 - Infrequent: A crack greater than or equal to 1/2" wide. Spalling and/or faulting may be present.
- E4 - Frequent: A crack greater than or equal to 1/2" wide. Spalling and/or faulting may be present.

F. Edge Punchouts (CRCP)

- F1 - Infrequent: 1 to 3 punchouts per mile; any severity level.
- F2 - Frequent: 4 or more punchouts per mile with little or no spalling.
- F3 - Frequent: 4 or more punchouts per mile with medium to high spalling. Temporary patching may have occurred.

G. Faulting - manual entry not required; distress measured by VIV sensors

- G1 - Infrequent: A fault that is less than 1/4" .
- G2 - Infrequent: A fault that is 1/4" to 1/2" .
- G3 - Infrequent: A fault greater than 1/2" .
- G4 - Frequent: A fault that is less than 1/4" .
- G5 - Frequent: A fault that is 1/4" to 1/2" .
- G6 - Frequent: A fault greater than 1/2" .

H. Corner Breaks (JRCP)

- H1 - Infrequent: Any severity level.
- H2 - Frequent: Crack has little or no spalling. Corner piece has little or no breakup.
- H3 - Frequent: Crack has medium to high spalling. Corner piece is likely to be broken up; patching may have occurred.

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I. Map Cracking and Scaling

- I1 - Infrequent: Low severity of map cracking exists; no scaling is present.
- I2 - requent: Any severity level of map cracking exists with 10% or less of the section scaled.
- I3 - Frequent: Any severity level of map cracking exists with greater than 10% of the section scaled.

J. Popouts/High Steel

- J1 - Infrequent: Any severity level.
- J2 - Frequent: With no associated distress.
- J3 - Frequent: With associated distress.

K. Permanent Patch Deterioration

- K1 - Less than 6% of the section patched.
- K2 - 6% to 12% of the section patched.
- K3 - Greater than 12% to less than 18% of the section patched.
- K4 - 18% or greater of the section patched.

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Distress Codes L through W apply to bituminous concrete pavements.

L. Alligator Cracking

- L1 - Low level: Hairline cracks with none or only a few interconnecting cracks. Cracks are not spalled.
- L2 - Medium level: Further development of interconnecting cracks into a pattern. Cracks may be lightly spalled.
- L3 - High level - Infrequent: Cracks have progressed so that the pieces are well defined and/or spalled at the edges.
- L4 - High level - Frequent: Cracks have progressed so that the pieces are well defined and/or spalled at the edges.

M. Block Cracking

- M1 - Low level: Hairline cracks with none or only a few interconnecting cracks. Cracks are not spalled.
- M2 - Medium level: Further development of interconnecting cracks into a pattern. Cracks may be lightly spalled.
- M3 - High level - Infrequent: Cracks have progressed so that the pieces are well defined and/or spalled at the edges.
- M4 - High level - Frequent: Cracks have progressed so that the pieces are well defined and/or spalled at the edges.

N. Rutting - manual entry not required; measured by VIV sensors

- N1 - Non-Continuous: Rut is less than or equal to 1/2" .
- N2 - Continuous: Rut is less than or equal to 1/2" .
- N3 - Continuous: Rut is greater than 1/2" .

O. Transverse Cracking/Joint Reflection Cracks

- O1 - Beginning Stage: Hairline cracks at any frequency.
- O2 - Infrequent: Cracks are open and less than or equal to 1/4" in width and may have low to moderate levels of associated distress.
- O3 - Frequent: Cracks are open and less than or equal to 1/4" in width and may have low to moderate levels of associated distress.
- O4 - Infrequent: Cracks are greater than 1/4" in width and may have moderate to severe levels of associated distress.
- O5 - Frequent: Cracks are greater than 1/4" in width and may have moderate to severe levels of associated distress.

P. Overlaid Patch Reflective Cracking

- P1 - Beginning Stage: Cracks are tight and the bituminous overlay is in very good condition in the vicinity of the cracks.
- P2 - Infrequent: Cracks are less than or equal to 1/4" and may have low to moderate levels of associated distress.

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- P3 - Frequent: Cracks are less than or equal to 1/4" and may have low to moderate levels of associated distress.
- P4 - Infrequent: Cracks are greater than 1/4" and may have moderate to severe levels of associated distress.
- P5 - Frequent: Cracks are greater than 1/4" and may have moderate to severe levels of associated distress.

Q. Longitudinal /Center of Lane Cracking

- Q1 - Beginning Stage: Cracks are tight (width is less than or equal to 1/4") with little or no spalling.
- Q2 - Infrequent: Cracks are between 1/4" and 1/2" and may have minor spalling.
- Q3 - Frequent: Cracks are between 1/4" and 1/2" and may have minor spalling.
- Q4 - Infrequent - One or more of the following conditions exist:
 - Cracks are greater than 1/2" in width
 - Cracks have severe spalling
 - Major maintenance activity has been performed on the crack
- Q5 - Frequent - One or more of the following conditions exist:
 - Cracks are greater than 1/2" in width
 - Cracks have severe spalling
 - Major maintenance activity has been performed on the crack

R. Reflective Widening Crack

- R1 - Beginning Stage: Cracks are tight (width is less than or equal to 1/4") with little or no spalling.
- R2 - Infrequent: Cracks are between 1/4" and 1/2" and may have minor spalling.
- R3 - Frequent: Cracks are between 1/4" and 1/2" and may have minor spalling.
- R4 - Infrequent - One or more of the following conditions exist:
 - Cracks are greater than 1/2" in width
 - Cracks have severe spalling
 - Major maintenance activity has been performed on the crack
- R5 - Frequent - One or more of the following conditions exist:
 - Cracks are greater than 1/2" in width
 - Cracks have severe spalling
 - Major maintenance activity has been performed on the crack

S. Centerline Deterioration

- S1 - Tight cracking with little or no spalling.
- S2 - Cracking with low to medium spalling.
- S3 - Infrequent: Cracks are open with medium to severe spalling.
- S4 - Frequent: Cracks are open with medium to severe spalling.

T. Edge Cracking

- T1 - Low or moderate cracking with no breakup or raveling.

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- T2 - Low or moderate cracking with some breakup and/or raveling.
- T3 - Infrequent: Cracking with considerable breakup and/or raveling.
- T4 - Frequent: Cracking with considerable breakup and/or raveling.

U. Permanent Patch Deterioration

- U1 - Patch has little or no deterioration. Cracks and/or edges are tight. No settlement has occurred.
- U2 - Patch is moderately deteriorated. Cracks and/or edges have opened. Settlement is less than 1/2" .
- U3 - Infrequent: Patch is badly deteriorated. The cracks and/or edges are severe. Patch replacement may be required.
- U4 - Frequent: Patch is badly deteriorated. The cracks and/or edges are severe. Patch replacement may be required.

V. Shoving, Bumps, Sags, and Corrugation

- V1 - Minor vehicle vibration.
- V2 - Moderate vehicle vibration.
- V3 - Excessive vehicle vibration.

W. Weathering/Raveling/Segregation/Oxidation

- W1 - Infrequent: Low to medium level of distress.
- W2 - Frequent: Low to medium level of distress.
- W3 - Infrequent: High level of distress.
- W4 - Frequent: High level of distress.

X. Reflective D-Cracking

- X1 - Asphalt overlay on D-cracking-susceptible pavement; no distress reflecting through the overlay. NOTE: This is a special use code and does not need to be entered during a condition rating survey. Please contact the Office of Planning and Programming before using this code.
- X2 - Asphalt overlay beginning to reflect D-cracking through the resurfacing. Little or no maintenance is required.
- X3 - Asphalt overlay with well-defined reflective D-cracking; maintenance is required.